

# 70 Years of DNA Double Helix: Celebration of Breakthroughs in Life Science

*Organized by Changping Laboratory on the Occasion of its 3rd Anniversary*

**Time:** October 21 - 22, 2023  
**Location:** Taikang Research Institute  
12 Science Park Road, Life Science Park  
Changping District  
Beijing, China  
**Chair:** **Sunney Xie**, CPL Director  
**Vice Chairs:** **Feng Shao**, CPL and NIBS Associate Director  
**Qinxian Jin**, CPL Associate Director  
**Maoye Ji**, CSHLA CEO

**October 21, 2023**

## **Opening Ceremony and Historical Account**

*Chaired by **Sunney Xie***

08:45 - 08:50	Children's Chorus - "You Raise Me Up"
08:50 - 08:55	Documentary - 3 Year Anniversary of CPL
08:55 - 09:00	Documentary - 70 Years of DNA Double Helix
09:00 - 09:05	Welcome Remarks by <b>Sunney Xie</b> , CPL
09:05 - 09:10	Welcome Remarks by <b>Yong Yin</b> , Mayor of Beijing
09:10 - 09:20	<b>Tom Maniatis</b> , NY Genome Center 2012 Lasker <i>Title TBA</i>
09:20 - 09:30	<b>Robert Tjian</b> , UC Berkeley <i>Tracing 30 years of Transcription Biochemistry: from sequence specific DNA binding factors to the Pre-initiation Complex</i>
09:30 - 09:40	<b>Maoye Ji</b> , CSHLA <i>James Watson and the Life Science of China</i>
09:40 - 09:45	Special Remarks by <b>James Watson</b> ( <i>recorded</i> ), 1962 Nobel

09:45 - 10:00 Panel Discussion with Speakers  
10:00 - 10:20 Tea Break

**Session I: DNA Sequencing**  
*Chaired by **Feng Shao***

10:20 - 10:45 **Shankar Balasubramanian**, Cambridge ,  
2022 Breakthrough  
*DNA: What is it Telling us?*

10:45 - 11:10 **Hagan Bayley**, Oxford  
*Nanopores: DNA Sequencing and Beyond*

11:10 - 11:35 **Long Cai**, Caltech  
*Spatial Genomics*

11:35 - 12:00 **Yanyi Huang**, CPL/PKU  
*Fluorogenic DNA Sequencing*

12:00 - 13:00 Lunch

**Session II: Genomics**  
*Chaired by **Qinxian Jin***

13:00 - 13:25 **Fuchou Tang**, CPL/PKU  
*Single Cell Omics Sequencing Technologies: The Third Generation*

13:25 - 13:50 **William Greenleaf**, Stanford  
*Exploring the Physical Genome*

13:50 - 14:15 **Bing Ren**, UCSD  
*Unlocking the Genome's Regulatory Code*

14:15 - 14:40 **Sunney Xie**, CPL/PKU, 2015 Albany  
*Decoding the Functional Human Genome*

**Session III Gene Editing**  
*Chaired by **Xiaodong Wang***

14:40 - 15:05 **Emmanuel Charpentier** (*Online*),  
MPUSP, 2020 Nobel  
*TBC*

15:05 - 15:30 **Wensheng Wei**, CPL/PKU  
*Gene Editing and Beyond*

15:30 - 15:50      Tea Break

### **Session IV: DNA and Immunology**

*Chaired by Yi Rao, CIBR*

- 15:50 - 16:15      **Fred Alt**, HMS/HHMI  
2023 Paul Ehrlich and Ludwig Darmstaedter  
*The Fundamental Mechanistic Roles of Chromatin  
Loop Extrusion in Antibody Gene Diversification*
- 16:15 - 16:40      **Tak Wah Mak**, Toronto, 1989 Gairdner  
*Neuro-immune Modulations in Health and  
Diseases*
- 16:40 - 17:05      **Zhijian “James” Chen**, UT Southwestern/HHMI,  
2019 Breakthrough  
*The Dark Side of DNA - How the Immune System  
Senses DNA as a Danger Signal*
- 17:05 - 17:30      **Feng Shao**, CPL/NIBS, 2019 Future Science  
*Pyroptosis: From Antibacterial Immunity to  
Antitumor Immunity*

### **Dinner (Invitation Only)**

- 18:00 - 18:30      Wine Reception
- 18:30 - 19:30      Dinner
- 19:30 - 19:45      Live Sand Painting
- 19:45 - 20:00      Reflections  
(Tom Maniatis, Robert Tjian, Don Cleveland, Fred  
Alt, Dennis Lo, James, Chen, Xiaodong Wang, Yi  
Rao, etc.)
- 20:00 - 20:45      Live Classical Concert

## **October 22, 2023**

### **Session V: Central Dogma**

*Chaired by Maoye Ji*

- 08:45 - 09:10      **Robert Tjian**, UC Berkeley

*Transitioning to Live Cell Dynamic Imaging of Transcription: What In Vitro Biochemistry could note reveal about In Vivo Mechanisms*

09:10 - 09:35

**Yanhui Xu**, Fudan

*Structural Insights into Transcription Initiation*

09:35 - 10:00

**Hisao Masai**, TMIMS

*Transcription can Drive DNA Replication*

10:00 - 10:25

**Xiangdong Fu**, Westlake

*RNA: Beyond a Message from DNA to Protein*

10:25 - 10:45

Tea Break

### **Session VI: Epigenetics**

*Chaired by **Don Cleveland***

10:45 - 11:10

**Anjana Rao**, La Jolla Institute of Immunology  
*Mutations in Clonal Hematopoiesis Compromise Heterochromatin Integrity*

11:10 - 11:35

**Yi Zhang**, HMS/HHMI

*5mC Oxidation and Beyond*

11:35 - 12:00

**Guoliang Xu**, SIBCB

*Biological Modifications of DNA Cytosine Base*

12:00 - 12:25

**Yiqin Gao**, CPL/PKU

*Relating Cell State Dependent Methylation to DNA Sequence and 3D Genome*

12:30 - 13:30

Lunch

### **Session VII: Genomic Medicine**

*Chaired by **Fred Alt***

13:30 - 13:55

**Xiaodong Wang**, NIBS, 2006 Shaw

*Dissecting Biochemical Pathways of Regulated Cell Death*

13:55 - 14:20

**Dennis Lo**, CUHK, 2022 Lasker

*Creating a Paradigm Shift in Prenatal Diagnostics using Circular RNA*

14:20 - 14:45

**Jie Qiao**, CPL/PKU

*Searching for Keys from the Genome: Thirty Years of PGT*

14:45 - 15:10

**Zemin Zhang**, CPL/PKU

*Tumor Heterogeneity at the Microenvironment Level and its Implication in Personalized Immunotherapy*

15:10 - 15:35

**Yunlong Cao**, CPL/PKU

*Broad-spectrum SARS-CoV-2 Therapeutics and Prophylactics designed based on Viral Evolution Prediction*

15:35 - 15:55

Tea Break

### **Session VIII: Genomic Neurobiology and Technology**

*Chaired by Zhijian “James” Chen*

15:55 - 16:20

**Tom Maniatis**, 2012 Lasker,  
NY Genome Center

*The Protocadherin Gene Cluster: A Bar Code Generator for Single Neuron Self-Recognition in the Mammalian Brain*

16:20 - 16:45

**Don Cleveland**, 2018 Breakthrough, UCSD

*Designer DNA Drug Therapy for Neurodegenerative Disease*

16:45 - 17:10

**Joseph Ecker**, Salk/HHMI

*What Lies Above? Mapping the Human Brain Epigenome*

17:10 - 17:35

**Xiaoqun Wang**, CPL/IBP

*Human Brain Genomics: A Journey through Development, Evolution and Disease*

17:35 - 18:00

**Hesheng Liu**, CPL

*Advances in Functional Brain Imaging Technology*

18:00 - 18:05

Closing by **Sunney Xie**